

REMARKS

At the time of the Office Action, Claims 1 – 23 were pending in the application. Claims 4 and 8 – 23 are withdrawn from consideration by the Examiner. Claims 1 – 3 and 5 – 7 are rejected in the Office Action.

On page 2 of the Office Action, the Examiner rejected Claims 1 – 3 and 6 under 35 U.S.C. 102(b) as being anticipated by Japanese Patent No. 10-25666. The Examiner states that mixture (A) contains a rubber latex having RFL and an epoxy. This rejection, in view of twice amended Claim 1, is respectfully traverse. The Japanese reference is directed at an adhesive composition for aromatic polyamides (nylons). In addition to polyepoxides and RFL, it requires a triazine compound and ethyleneimine. The polyamide fiber having RFL, polyepoxide, triazine compound blocked polyisocyanate and ethyleneimine provides superior bonding of the polyamide fiber to the rubber (according to the Japanese reference). There is no teaching that a simple epoxy/RFL mixture would give good adhesion with polyester. Claim 1, twice amended, discloses a composition consisting essentially of epoxy and RFL as a mixture to provide good adhesion with polyester fibers. Lastly, the Japanese reference discloses compositions having up to 20-weight % of epoxy resins in the RFL. This is significantly higher than the composition of the present invention which calls for 2 – 12 weight%.

Atop page 3 of the Office Action the Examiner has rejected Claims 1 – 3 and 5 – 7 under 35 U.S.C. 102(b) as being anticipated by Mori et al. The Examiner states that Mori et al. show an adhesive composition comprising RFL resin and an epoxy resin. This rejection, in view of Claim 1 twice amended, is respectfully traversed

The reference of Mori et al. is directed to the use of a nitrile rubber. It states in column 5, lines 44 – 45 that: “It is essential that the adhesive composition of the present invention comprise neither an aliphatic nor alicyclic epoxy resin, but an aromatic resin”. The aliphatic epoxy resins in Tables 2 and 3 of Mori et al. are used as comparative

examples and would lead one skilled in the art away from using epoxy compounds in a single dip adhesive composition.

✓ With the present invention, it is found that aliphatic epoxies work well with binding polyester fibers to rubber. In fact, Mori et al. would teach away from using the epoxy resin claimed in Claim 5. It is submitted that Mori et al., in view of Claim 1, twice amended, do not anticipate the present invention, as claimed in Claim 1.

On page 3 of the Office Action, the Examiner has rejected Claims 1 – 3, 6 and 7 under 35 U.S.C. 103 as being unpatentable over Aufdermarsh, Jr.; Takata et al.; Imai et al.; and Japanese Patent No. 11-286875, and Japanese Patent 9-12997; and Japanese Patent 10-46475; and Japanese Patent 2000-8280; and Japanese Patent 62-276091, and Japanese Patent 10-212674 all in view of Mori et al. and Japanese Patent No. 10-25666. The Examiner states that Aufdermarsh, Jr., Takata et al., Imai et al. and the Japanese patents set forth single dip adhesive compositions composed of an epoxy resin and an RFL latex containing rubber. The Examiner states that the claimed amount of epoxy resin is not recited. The Examiner concludes that Mori et al. teaches from 1.5 – 16% by weight epoxy resin. The Examiner also states that Japanese reference '666 teaches the inclusion of from 8.3 – 16.4% by weight of epoxy resin. The Examiner concludes that it would have been obvious to employ the epoxy resin of Aufdermarsh, Jr., Takata et al., Imai et al. and the Japanese patents in proportion with the ranges of Mori et al, and Japanese '666 in order to improve abrasion resistance and adhesion of the fibers to the rubber. This rejection, in view of Claim 1 twice amended, is respectfully traversed.

✓ Aufdermarsh, Takata, Imai and the Japanese references are directed to making an aqueous dispersion of a blocked isocyanate or a water-soluble polyurethane in a RFL resin composition. In addition, Aufdermarsh, for example, has a water insoluble polyepoxide in a rubber latex. In Takata and others, the polyepoxide is applied to a drawn yarn, i.e. an adhesive activated yarn.

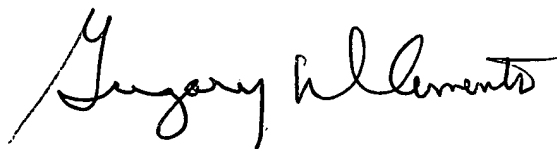
In view of amended claim 1, it is submitted that these references do not teach a single dip composition consisting essentially of epoxy and RFL that give superior adhesion results for polyester fibers in rubber. In particular, many of these references teach the use of isocyanate and other compounds with the epoxy and RFL.

On page 4 of the Office Action, the Examiner rejects Claim 5 under 35 U.S.C. 103 as being unpatentable over Aufdermarsh, Jr.; Takata et al.; Imai et al.; and the various Japanese patent references set forth above further in view of Japanese Patent No. 4-316670 and 8-13346. The Examiner states that the Japanese reference '670 and '346 show an adhesion having a blend of sorbital epoxy resin and RFL latex. The Examiner states that it would have been obvious to employ such an epoxy resin in Aufdermarsh, Jr., Takata et al., Imai et al. or any of the Japanese references. This rejection, in view of twice amended Claim 1, is respectfully traversed.

While the Japanese reference '670 and '346 do teach sorbital epoxy resin, they also require many other components to make the adhesive. Because Claim 1 only calls for epoxy and RFL latex, and this composition gives superior adhesive results with polyester fiber, it is submitted that these references are now no longer pertinent in view of amended Claim 1.

In view of the amendment to Claim 1 and in light of these remarks it is submitted that the present application is now in condition for allowance and such is earnestly solicited.

Respectfully submitted,



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Version With Markings to Show Changes Made

In the Claims:

Claims 1 has been amended as follows:

1. (Twice Amended) A single dip adhesive composition ~~comprising~~ consisting essentially of: from about 2 - 12 wt. % epoxy resin, and resorcinol formaldehyde latex, based on a dry weight basis.